

# 2017 State of the Urban Forest Annual Report

Presented to the City of Everett  
Board of Park Commissioners  
April 2018

**by the Everett Tree Committee**

*To protect, strengthen and expand Everett's urban forest  
through education, planning and maintenance*



# Table of Contents

<b>Executive Summary .....</b>	<b>3</b>
<b>Introduction .....</b>	<b>7</b>
<b>What is an Urban Forest .....</b>	<b>7</b>
<b>Why is Our Urban Forest Important .....</b>	<b>8</b>
<b>Costs and Benefits of an Urban Forest .....</b>	<b>11</b>
<b>Tree Policy History .....</b>	<b>13</b>
<b>State of Everett's Urban Forest .....</b>	<b>14</b>
<b>Current Urban Forest Management .....</b>	<b>14</b>
Parks and Recreation Department	
Public Works Department	
Private Property Owners	
<b>Recommended Actions .....</b>	<b>17</b>
Emphasize Education and Engagement	
Conduct a Tree Inventory	
Develop an Urban Forest Management Plan	
Set City-wide Tree Canopy Cover Goals	
Increase Investments in Routine Tree Care	
Update the City's Tree Policy	
Create a Strong Tree Protection and Retention Ordinance	
<b>References .....</b>	<b>28</b>
<b>Appendix A. Total Trees Planted by Neighborhood .....</b>	<b>30</b>
<b>Appendix B. Tree Committee Member List .....</b>	<b>31</b>
<b>Table 1. Net Tree Gain/Loss on Public Property .....</b>	<b>4</b>
<b>Table 2. Ratios of Deciduous to Evergreen Trees by Department .....</b>	<b>5</b>
<b>Table 3. Annual Net Benefit of Different Sized Trees .....</b>	<b>12</b>
<b>Table 4. Annual Air Quality of Trees at 40 Years .....</b>	<b>13</b>
<b>Table 5. City Urban Forest Activity from 2011-2017 .....</b>	<b>15</b>

# Executive Summary

## Background

The Tree Committee is happy to report to the City of Everett Parks Board that the City is working to actively improve the health and canopy of its urban forest in parks and on large public works owned land. City departments charged with the maintenance and health of these parcels of wooded land are working diligently and in good faith.

The urban forest includes all the trees within the City; it is owned and maintained by the City and thousands of private land owners. Maintaining a healthy urban forest is cost effective and provides benefits to the “triple bottom line” – economic, environmental and social. Recent studies demonstrate that urban trees, especially large ones, provide the strongest net dollar benefit.

*"We need to start having this discussion about the impact of trees on human health."*

- Dave Nowak, research forester, regarding air pollution and human health (Hamblin 2014)

At this time, the size and health of the urban forest in the City of Everett is not fully quantified and assessed as to its structure, function and value. The Parks Department and Forterra’s “Green Everett” Partnership (started in 2012) continues to make significant progress toward restoring forest health on park properties in the City. Volunteer forest stewards are trained to coordinate various work parties in priority park areas to remove invasive plants, and replant with an appropriate mix of evergreen and deciduous native plants.

The Tree Committee looks forward to a time when the entire urban forest of Everett can be similarly assessed and maintained, with a full time urban forester at the helm and a dedicated maintenance staff to fulfill tasks now performed by Parks and Public Works staff and contractors. Towards that end the Tree Committee has gathered information from city departments to report on the planting, removal and maintenance efforts the City has undertaken in the last seven years.

## Tree Ownership

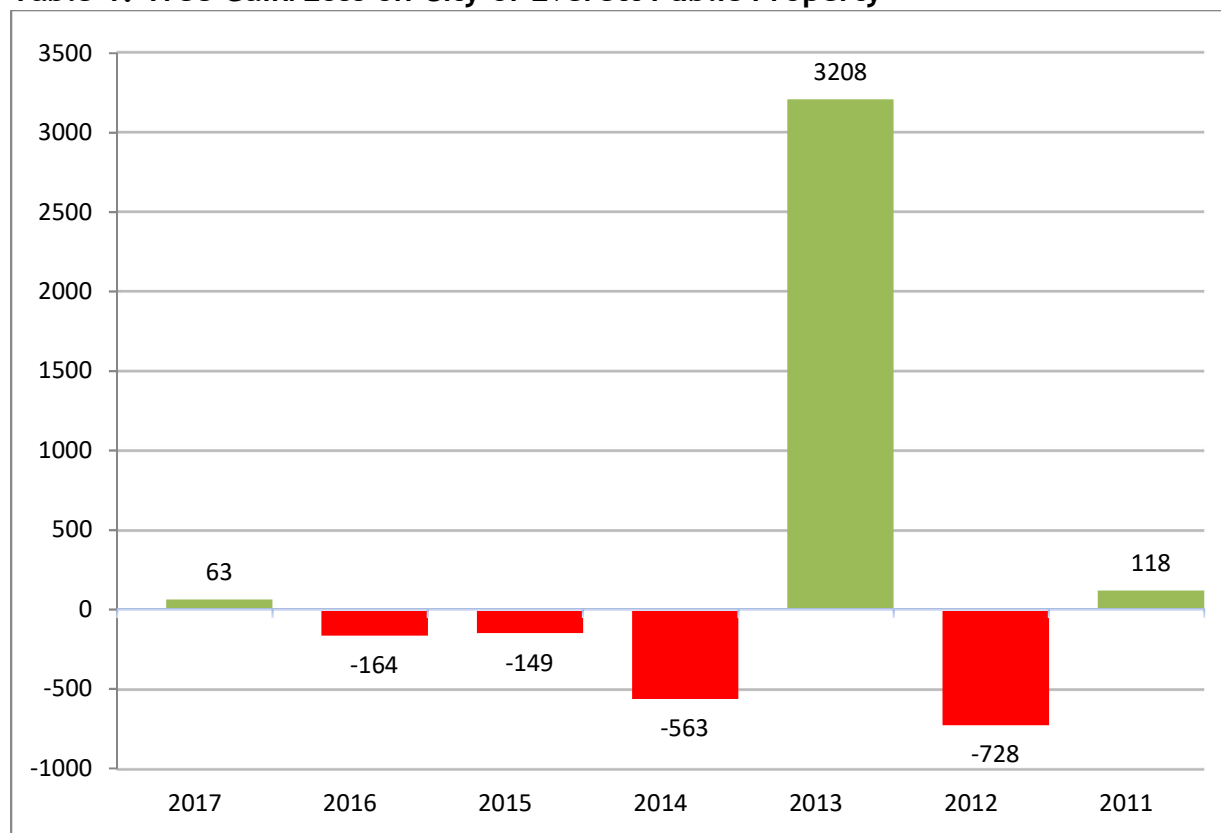
The City of Everett manages most of the city-owned urban forest through its Parks Department and Public Works Department. In addition to the city’s numerous parks and pocket parks, this department also has responsibility for tree and landscape planting and maintenance in the Central

Business District (downtown business core). Public Works is responsible for trees on city-owned property such as street medians and corners, utility corridors and bio-infiltration cells, as well as sensitive areas such as wetlands, ravines and steep slopes. Both departments share in planting and maintaining various landscaped gateways and medians throughout the city. Private citizens and businesses are responsible for properly maintaining street trees planted in their right-of-way.

## 2017 Summary of Urban Forest Gain or Loss

In 2017, the City planted 680 trees, removed 499 trees, storm damage resulted in 118 lost, for a net gain of 63 trees (see Table 1 below). Three-quarters of the loss occurred in parks from removing hazardous, overcrowded or diseased trees as part of forest management and restoration plans. The Parks Department planted eleven percent more trees in 2017 than they did in 2016.

**Table 1. Tree Gain/Loss on City of Everett Public Property**



## Tree Trend from 2011 to 2017

To look at trends, this report will mainly concern itself with data collected from 2011 forward as data before then is inconsistent. Over the past six years, the public tree total has maintained a net gain of 1,785 trees.

While Parks has an overall net gain of 2,667 trees, Public Works has a net loss of 882 trees. Trees planted by Public Works along streets and sidewalks form a network throughout the entire

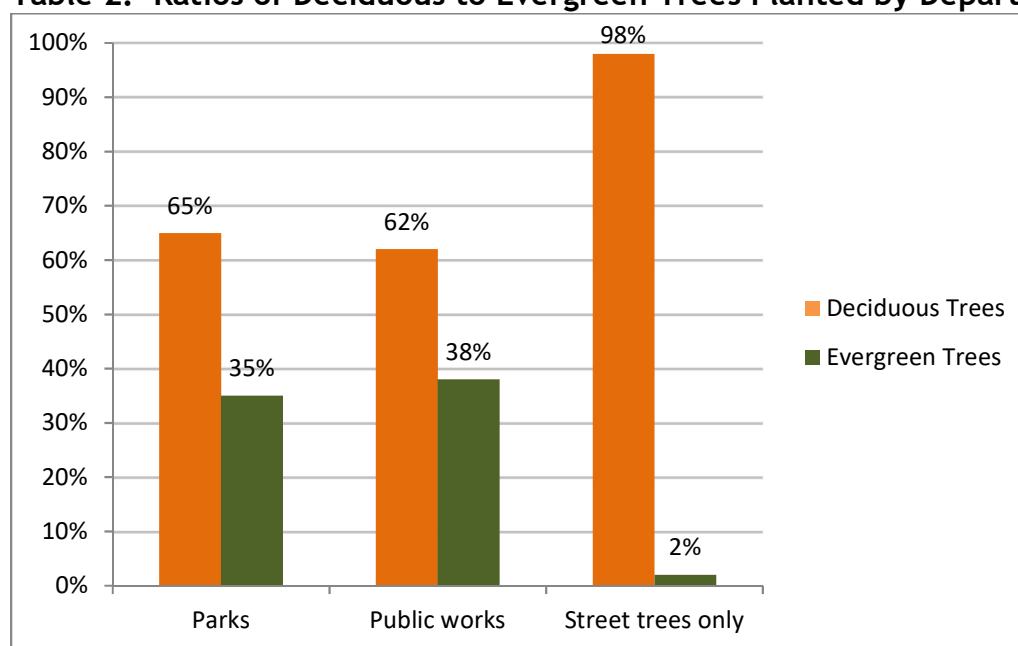
city. This green infrastructure is of upmost importance in providing numerous health, social, environmental and economic benefits and needs to be strengthened at every turn to reap the maximum return.

### Evergreen to Deciduous Tree Ratio

Evergreen trees are critical to plant in urban areas – they intercept rain, reduce runoff and flooding during our rainy winter season, and sequester carbon all year long. Deciduous trees (those that lose their leaves) can only intercept rain and absorb carbon when they are in leaf. In 2017, the Parks Department that ratio was 35% evergreen to 65% deciduous trees (Table 2).

Public Works street tree neighborhood plantings were 2% evergreen and 98% deciduous trees (Table 2). Once the Public Works tree plantings on other city properties are included, this ratio changes to 62% deciduous to 38% evergreen trees.

**Table 2. Ratios of Deciduous to Evergreen Trees Planted by Department**



### Parks Tree Activity

Since 2000, approximately 5,000 trees have been planted on 49 properties or locations (parks, gateways and medians). In addition to planting, removing and pruning trees, in 2016 Parks staff also conducted new work creating important wildlife snags from 5 dead or dying trees, and improving the root and soil environment for 228 trees.

### Public Works Tree Activity

Since the year 2000, approximately 6,866 trees have been planted along more than 1,428 lane miles in the city's 19 neighborhoods (see Appendix A for total number of trees planted in each neighborhood since 2000-2016). In addition, 3,828 trees have been planted on other Public Works or city-owned properties (ravines, utility corridors, detention ponds, green belts, etc).

## **2017 Tree Committee Accomplishments**

In 2016, the Tree Committee's biggest accomplish was taking the lead to research, discuss and draft a much-needed update to the City's 1993 Tree Policy. This work continues in 2018. Members reviewed tree policies and forest management plans from other cities across the country and decided to use the Tacoma Urban Forest Policy as our structural model and springboard. One member wrote the initial policy draft and made substantial edits and revisions from continuing discussions at meetings.

The Tree Committee experienced significant member and staff changes in 2017: including two new committee members in 2017, two committee members ending their tenure and two staff liaisons retiring. This has allowed new members and staff to discuss goals and policy moving forward. The committee is excited to continue working to improve the city's urban forest and the relationship between staff and city residents.

## Introduction/Purpose

The purposes of this annual report are to:

- Define the urban forest and enumerate the benefits of a vibrant, functioning urban forest
- Provide the current status of Everett's urban forest and its current management to the Parks Board, elected city officials, city staff and the public
- Recommend actions that will achieve a sustainable and beneficial urban forest within the city limits
- Review this year's accomplishments and ongoing actions by the Tree Committee

## Tree Committee Goals

The Tree Committee's main goals are:

- Maintain the health of the existing urban forest on city-owned lands
- Increase the city's urban forest
- Maximize tree longevity, species and age diversity
- Incorporate native trees and understory plants where appropriate
- Improve communication and partnerships with city boards, departments and elected officials
- Inform neighborhoods about the City's free tree planting program
- Educate residents and businesses about the benefits of trees (especially big trees)
- Educate residents and businesses about proper tree care and pruning practices

Our goals are divided into seven categories and include our accomplishments to date. See Appendix A for a list of Tree Committee members and City department liaisons.

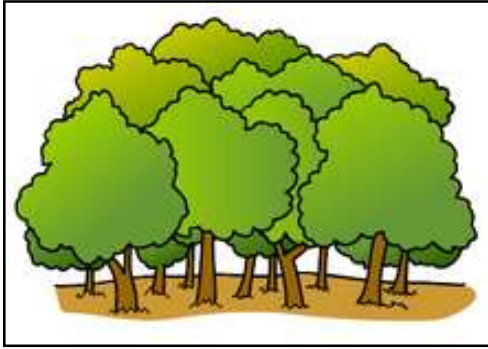
This report attempts to recommend some steps the City of Everett needs to take to better preserve its existing urban forest and enhance its future. While much information has been collected from city departments, the recommendations stated within this report are solely those of the current Everett Tree Committee, a subcommittee of the Everett Parks Board.

## What is an Urban Forest?

Everett's urban forest consists of all the trees and other vegetation within the city limits, on both public and private property. Our urban forest includes street trees, median landscapes, gateway plantings, park trees, forested slopes and ravines, wetlands, natural areas, trees on institutional and commercial campuses, and those on private property. Everett's urban forest is currently co-managed by private property owners, the city's Parks and Recreation Department, and the Public Works Department.

*Forests are  
one of the  
most vital  
ecosystems  
on the  
planet,  
essential for  
life on earth.*

American Forests  
2017



## Why is our Urban Forest Important?

An urban forest is much more than trees, other vegetation, soil and water – it's a perhaps not-so-obvious yet invaluable resource with a well-honed, efficient life cycle and essential public benefits that extend from 20 years to hundreds of years, depending on tree species and where it's growing.

Research from the past ten years across the country as well as here in the Pacific Northwest has shown that trees and urban forests provide a wide variety of substantial health, social, environmental and economic benefits. And most people are not aware of them.

Trees and other green spaces are a community's living infrastructure, and as such, can be leveraged to balance a city's grey infrastructure (buildings, streets, sidewalks, driveways), and make it more sustainable, beautiful and livable. Primary scientific research gathered by the Alliance for Community Trees (2011) and American Forests (2017) shows that urban trees and forests provide the following ecosystem and other services:

**Green infrastructure benefits** include economic savings, reducing stormwater runoff and flooding, reducing maintenance costs, and improving air quality, water and soil quality

**Public health benefits** include improving attention, decreasing asthma and obesity, improving mental and physical health, reducing hospital days, protection from UV rays and reducing noise.

**Road and traffic benefits** include calming traffic, reducing accidents and reducing road maintenance costs.

**Business benefits** include increasing sales, increasing desirability, increasing rents and creating jobs.

**Property value benefits** include an increase in property values parallel with the number of trees, and larger trees.

**Climate change and carbon benefits** include storing carbon, reducing carbon emissions, carbon mitigation programs, and reducing heat island effects.

**Energy use benefits** include reducing cooling costs in the summer, and increasing energy efficiency

**Community benefits** include reducing violence and crime, improving neighborhoods, and improving connectivity among neighbors.

**Wildlife benefits** include creating and enhancing habitats, increasing biodiversity, and providing reservoirs for endangered and threatened species.



*The bulleted listing below provides examples of some of these proven benefits:*

### **Trees are Good for Us**

- People would rather walk, ride bikes, and work outdoors where trees are present.
- Hospital patients who have a view of trees heal faster, use fewer pain medications and spend eight percent fewer days in the hospital.
- Trees help people live longer, healthier, happier lives to the tune of \$6.8 billion in averted health costs annually in the U.S.
- Trees in the landscape relax us, lower our heart rates, and reduce stress.
- Children with ADHD show fewer symptoms when they have access to nature.
- Trees provide "white noise"; leaves and branches moving in the breeze mask other human-caused sounds.
- Students with trees outside school windows have higher test scores and graduation rates after controlling for other factors.



### **Trees Lessen Crime and Violence**

- There is less graffiti, vandalism, and littering in outdoor spaces with natural landscapes than in comparable plantless spaces.
- Apartment buildings with high levels of greenery had 52% fewer crimes than those without any trees. Buildings with medium amounts of greenery had 42% fewer crimes.
- Neighborhoods and homes that are barren are shown to have a greater incidence of violence in and out of the home than their greener counterparts.

### **Trees Are Good for Business**

- Workers are more productive and happier when they see trees along their commute and from their office windows.
- Consumers say they'd spend up to 13 percent more at businesses landscaped with trees.
- People shop more often and longer in well-landscaped business districts and are willing to pay more for parking.
- Trees planted in paved areas (streets, sidewalks, parking lots) provide much needed shade and cooling for humans, pets and vehicles.
- Tree landscaping has the highest correlation with office occupancy rates, higher even than direct access to arterial routes.
- In one survey, 74 percent of the public preferred to patronize businesses whose structures and parking lots were beautified with trees and other landscaping.
- A tree-lined street slows traffic enough to allow drivers to look at the store fronts.

### **Trees Can Make/Save Us Money**

- Trees increase the value of residential properties. Houses surrounded by trees sell for 18 to 25 percent more than houses with no trees.
- Green streets, rain barrels, and tree planting are estimated to be 3 - 6 times more effective in managing stormwater per \$1,000 invested than conventional methods.



- A mature tree canopy reduces surrounding air temperatures by 5-10 degrees, and can lower the air conditioning needs of nearby buildings.
- Researchers found a 30 percent increase in appraised home values based on the amount and variation of tree cover.
- The net cooling effect of a young, healthy tree is equivalent to 10 room-size air conditioners operating 20 hours a day.
- Trees cool city “heat islands” (downtown areas, parking lots) by 10 - 20 degrees, reducing ozone levels and helping cities meet the air quality standards required for disbursement of federal funds.

### **Trees Clean the Air We Breathe**

- In one year, an average size tree produces enough oxygen to keep a family of four alive.
- Leaves filter the air by trapping dust and other particles on their leaves and bark.
- Tree leaves absorb air pollutants such as ozone, carbon monoxide, and sulfur dioxide.
- Roadside trees reduce nearby indoor air pollution by more than 50%.
- In one year, an acre of mature trees absorbs the amount of CO<sub>2</sub> produced when you drive 26,000 miles.

### **Trees Clean the Water We Drink**

- More than half of U.S. drinking water originates in forests (including Everett’s water).
- Trees hold soil in place on steep slopes and trap pollutants from entering waterways.
- By slowing down rain and runoff, trees allow water to sink into the soil and help replenish underground water reservoirs (source of well water).
- One large tree can capture and filter up to 36,500 gallons of water per year.
- Runoff from forested areas is 17 percent less than that from developed areas.
- The nation's urban trees provide \$400 billion worth of stormwater management services by soaking up rain water from storms and reducing floods.

### **Trees Reduce Global Climate Change**

- Trees are ‘carbon sinks’, meaning they absorb more carbon than they release.
- Trees that shade city streets are 15 times more effective in reducing carbon dioxide build-up than trees in rural areas.
- One large healthy tree can absorb 75 percent of the carbon dioxide produced by the average car (storing it in their trunks, branches, leaves and roots).

# Costs and Benefits of an Urban Forest

Existing tree covered landscapes need to be recognized for their essential environmental services and budget-saving economic values. When urban forests are healthy, they provide communities with many invaluable services that can now be measured in dollar benefits.

Thanks to much research done within the past ten years by the USDA Forest Service, American Forests (a leading national organization in urban forest management and research) and universities, it is now possible to quantify to some degree the environmental benefits of trees, as well as property values related to trees.

Cost/benefit analysis has also been performed using data from Pacific Northwest cities that have an extensive urban forest (McPherson et al. 2002, McPherson et al. 2003). Since costs and benefits can vary (depending on tree size) while others remain intangible or difficult to quantify, this analysis can only produce estimates. But those estimates are still valid and useful for making decisions.

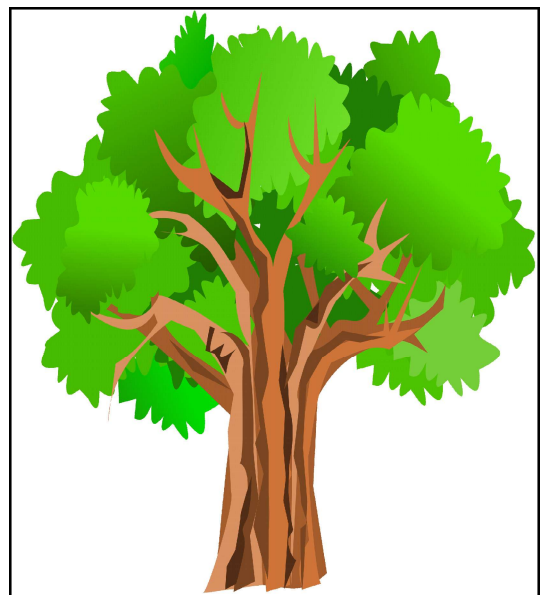
McPherson and his group studied small, medium and large trees in three cities in western Washington (Longview, Olympia and Seattle) and three cities in western Oregon (Portland, Tigard and Albany). Their research showed that Pacific Northwest cities spend an average of \$3.25 per tree, annually, for street and park tree management (McPherson et al. 2002).

Generally, the single largest expense was for pruning, followed by tree removal and planting. McPherson et al. also found that in most Pacific Northwest cities, tree planting has not kept pace with removals, especially as older plantings succumb to declining health, new development pressures, and the like.

## More Planting Space = Larger Trees = More Bang for the Buck

More importantly, the researchers found that limited growing space in cities is responsible for an increase in planting smaller, shorter-lived trees. These trees provide far fewer benefits compared to larger trees. This selection is driven heavily by concerns over interference with above- and below-ground utility lines, sidewalks, vehicle sight distances, etc. as well as long-term maintenance costs.

The planting of trees and other landscaping is most often and unfortunately considered last in any planning effort. By default, making sure there is adequate space for tree growth above ground and root growth below ground is usually not an option late in a project's development.



## Trees as Essential Infrastructure

However, if trees were considered essential infrastructure, and if they were incorporated at the start of planning and design processes as ‘must haves’, and if planners and developers were

encouraged to think ‘outside the box’, this Committee believes the outcome could be much better than what exists now.

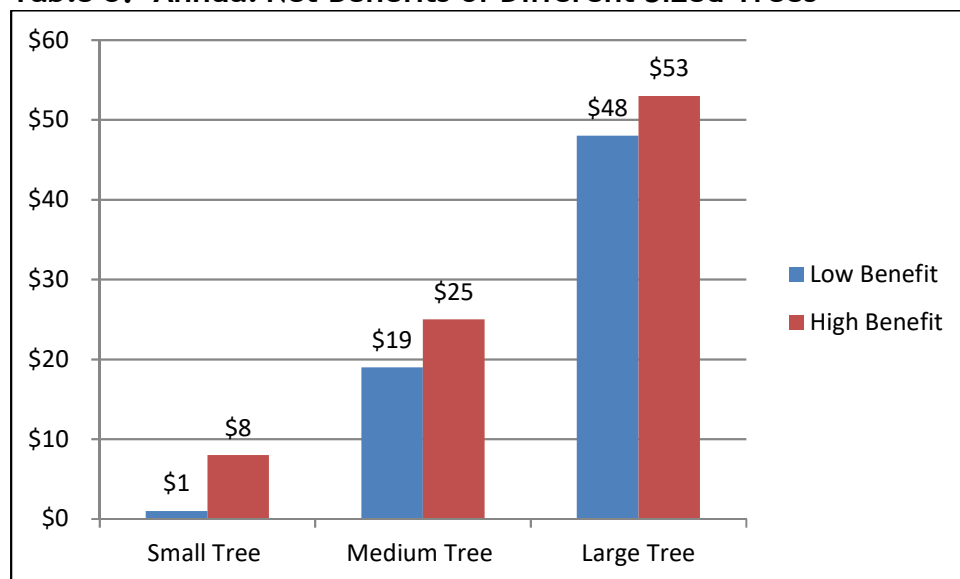
Currently, street trees are confined to grow roots and try to survive in the absolute smallest of spaces (coffin vaults) along sidewalks and in medians. These trees are fighting a losing battle from day one. They are continually stressed – cramped roots strangle each other as they grow in diameter, the space gets compacted from people walking on the soil, less water and air can get to the roots, etc. In 10-12 years the tree dies, it needs to be torn out and replanted anew. Imagine the benefits accrued and labor and other costs saved if street trees were allowed to grow to their full potential above and below ground because their space needs were amply met.

McPherson et al. (2002) considered the costs of urban street trees to be planting, pruning, removal, pest and disease control, maintenance and irrigation, while the benefits of urban street trees included energy savings, reduced atmospheric carbon dioxide, improved air quality, reduced stormwater runoff, and amenity benefits. [See Chapter 2: *Quantifying Benefits and Costs of Community Forests in Western Washington and Oregon Communities* in McPherson et al. (2002) for a detailed explanation of how these costs and benefits were determined.]

### Large Trees Provide SIX Times the Benefits of Small Trees

When costs are compared to benefits, they found that individual trees actually generate positive net values over a 40-year life cycle (McPherson et al. 2002). One small tree generates \$1-8 in net benefits annually, one medium tree generates \$19-25 in net benefits annually, and one large tree generates \$48-53 in net benefits annually (Table 3). When comparing tree sizes, it becomes obvious that large trees provide conservatively at least six times more benefits than small trees.

**Table 3. Annual Net Benefits of Different Sized Trees**



As Table 4 shows, the benefits of planting, retaining and protecting large trees far outweigh the benefits of planting and protecting small trees (USDA Forest Service 2005). When urban trees

are large and healthy, the surrounding environment is healthy. Large trees are the result of healthy soils, adequate space and water, and healthy air.

**Table 4. Annual Air Quality Benefit of 100 Trees at Year 40, Longview, WA**

Tree Size	Pollutant Uptake (lbs)	Value	CO2 (lbs)	Value	Total Value
Large	235.5	\$543.00	46,600	\$699.00	\$1,242.00
Small	67.0	\$162.00	2,700	\$40.00	\$202.00

## **As Forests Decline, Costs Increase**

All forests in the Puget Sound are in decline while the need for their ecological functions is increasing. In 1998, American Forests conducted a regional ecosystem analysis of the Puget Sound metropolitan area to determine how the landscape had changed between 1972 and 1996 (American Forests 1998). This included the cities of Seattle, Tacoma, Seatac, Redmond, Bellevue and Everett.

Using GIS and their CITYgreen software, American Forests found the following:

- Areas with 50 percent tree cover or more declined by more than one-third (<37%)
- Areas with less than 20 percent tree cover more than doubled (>57%)
- Replacing this lost stormwater retention capacity with man-made systems = \$2.4 billion
- Removing all the pollutants from the atmosphere with man-made systems = \$95 million

Cities spend tremendous amounts of money installing stormwater control systems and repairing damage from unmanaged water flow. In addition, cities that cannot meet Federal Environmental Protection Agency attainment levels for air and water quality jeopardize federal funding for their capital improvements. Nonstructural methods, including planting trees as green infrastructure, can significantly reduce budget costs and help cities meet current air and water quality standards.

## **Tree Policy History**

Development of the City of Everett's Tree Policy began in 1991. The final policy was approved by the Everett Park Board and Planning Commission on April 27, 1993. Everett then adopted a Public Tree Policy and a 'City of Everett Public Tree Management Ordinance' in June of that year. This ordinance authorized a subcommittee of the board of Park Commissioners, entitled the Tree Committee. The primary responsibility of the Tree Committee is to make recommendations to the Parks Board concerning implementation of the City's Tree Policy.

Today, the Tree Committee's main goals include increasing the urban forest canopy on city-owned lands; optimizing species diversity; using native trees and understory plants where appropriate, improving communication with city boards, departments and elected officials; informing neighborhoods about the City's free tree planting program, and educating residents and businesses about proper tree choices, care and pruning practices. See Appendix A for a list of Tree Committee members.



# State of Everett's Urban Forest

The current size and health of the City of Everett's urban forest is unknown. Based on regional data, we know there are many pressures on urban forests, resulting in their likely decline. While street tree and landscape plantings appear to be increasing faster than trees are being removed due to age, disease or hazards, ongoing residential and commercial development pressures in Everett are eliminating remaining pockets of large and small native forest, leading to an overall reduction in urban forest canopy and health. The work initiated by the Parks Department and Forterra is a major milestone toward urban forest restoration, and the Tree Committee is committed to working with the City to establish a baseline urban forest inventory for the entire city.

## Current City Urban Forest Management

"Plant the right tree in the right place" is a common theme for urban forest management in Everett. The two city agencies in charge of trees, the Parks and Recreation Department and the Public Works Department, are working very hard to be smarter about what trees they plant and where they plant them. Putting the right tree in the right place reduces replacement or maintenance costs and associated repairs, while increasing tree health, longevity and environmental services.

Public Works, Parks and Tree Committee have finalized recommended tree lists and planting criteria to help inform tree selection along city streets, on commercial and residential properties, and in larger open spaces. After internal testing on the City's website, this information will be shared with commercial builders, landscape professionals and city residents via public planning documents and the city's website.

### Parks and Recreation Department

The Everett Parks and Recreation Department manages urban forests within the city park system and other areas as assigned (city gateways, downtown corridors). The Parks Department manages approximately 65 parks and open spaces, which include about 1,600 acres of land and 354 acres of urban forest. The Parks Department employs one Horticultural Supervisor, one full time arborist and two full time laborers, plus seasonal labor, to perform all tree maintenance, including planting, watering, staking, fertilizing, pest management, trimming and removal.

The total number of trees planted in Everett's parks is unknown prior to 2009. In addition, the number or species of trees planted or removed during this time was not collected. This is critical information that needs to be recorded for current and future management purposes (landscaping choices, maintenance needs, diversity, diseases, etc.). To rectify this, a first ever landscape scale tree inventory is in progress..



## Parks Urban Forestry Work in 2017

In 2017, Parks planted 447 trees in over 25 park maintained properties, removed 187 trees and conducted pruning and other maintenance on 1118 trees (see Table 5). Parks experienced a net gain of 181 trees. Parks staff continues to work with Forterra and the growing number of forest stewards and volunteers, along with schools, businesses, community groups and work release crews to plant trees and promote tree stewardship. Parks staff also partners with the Public Utilities District, local schools, and businesses to hold an excellent annual Arbor Day celebration and planting in April for the City of Everett.

**Table 5. City Urban Forest Activity from 2011-2016**

Department	Seven YR TOTALS	2017	2016	2015	2014	2013	2012	2011
<b><i>Parks</i></b>								
Planted	4,589	447	400	112	459	2,850	191	130
Removed	-1,575	-187	-476	-40	-64	-102	-630	-76
Wind downed	-347	-79	-71	-176	-5	-6	-10	
<b>Total</b>	2,667	181	-147	-104	390	2,742	-449	54
<b><i>Public Works</i></b>								
Planted	2,255	233	261	340	365	515	301	240
Removed	-2,774	-312	-206	-150	-1,315	-48	-567	-176
Wind downed	-365	-39	-72	-235	-3	-1	-13	-2
<b>Total</b>	-882	-118	-17	-45	-953	466	-279	64
<b>Net Planted*</b>	1,785	<b>63</b>	<b>-164</b>	<b>-149</b>	<b>-563</b>	<b>3,208</b>	<b>-728</b>	<b>118</b>

## Public Works Department

The Everett Public Works Department manages the urban forest within developed and undeveloped right-of-ways and open spaces, via its Street Division. The Department uses one-eighth of one supervisor's time to manage trees within city rights-of-way and utility areas, and one-fourth of two crew member's time to maintain sidewalk and street clearances.

## Free Street Tree Program

The Street Division assists property owners in managing the urban forest within these right-of-ways and partnering with neighborhoods to manage the city's free street tree planting program. Their well-established Street Tree program is largely responsible for increasing tree cover on or near private property in the city.

Tree planting totals by neighborhood, since the year 2000-2016, vary greatly:

1-100 trees = 5 neighborhoods (Westmont has had only 1 tree planted in 15 years)

101-250 trees = 3 neighborhoods

251-500 trees = 6 neighborhoods  
501-1,000 trees = 5 neighborhoods (Port Gardner holds the record with 1,110 trees planted)

### **Public Works Urban Forestry Work in 2017**

In 2017, Public Works planted 233 trees, removed 312 trees and conducted pruning and other maintenance on 895 trees (see Table 5). Public Works experienced a net loss of 118 trees. Trees were planted at 20 addresses as well as on city properties.

### **Natural Water Filtering Areas**

#### Bio-infiltration cells

The several bio-infiltration cells (created and planted in 2015) underwent their first year in existence without hands-on maintenance. Plantings appeared to be healthy and doing well. These low-tech depressions naturally filter out road pollutants (antifreeze, oils, gasoline, etc.) and yard chemicals (fertilizers, pesticides, etc.) from rain or snow melt before that water enters the city's drainage system and is piped into Puget Sound. All were planted with only three native species (to make maintenance of these areas as fool-proof and efficient as possible).



#### Filtterra storm drains

Another natural filtering system, Filtterra storm drains (also installed in 2015 on Everett Ave, Hoyt Ave, Dogwood Ave and East Grand Avenue) underwent seasonal maintenance by the contractor. These drains are much smaller but similar to bio-retention ponds in function and application. However, they can handle higher volumes of polluted water from streets and yard runoff, and can remove more pollutants quantity-wise. Their small footprint allows them to be used in

landscaped areas, parking lots and along streets. Only certain species of trees and shrubs can be used as the plant and special planting soil mixture are key to capturing certain pollutants. Soil was replaced in all of them and in some drains. The plants have been replaced at least three times due to failure because of insufficient size, drought and safety concerns.

### **Private Property Owners**

Collectively, private property owners (residential and commercial) manage most of Everett's urban forest. That is, they manage the urban forest that is located on their property. This includes the planting strip between sidewalk and street (usually but not always in the right-of-way), front and back yards, buffers, green belts, critical areas, and sometimes stormwater retention or detention areas. Private property owners are expected to properly maintain and care for all the vegetation on their property.

Business and commercial property owners also have extra landscaping required in their undeveloped right-of-way and around their property. They are also required to properly maintain and care for all trees planted in the right-of-way. No data exists regarding maintenance activities,



number of trees, species, size, etc. on private property within the City of Everett. Estimates should be developed as part of any urban forest inventory.

## Recommended Actions

The Tree Committee recommends the following broad actions to ensure that this valuable living element of the City is at least maintained at a minimum threshold and used as a versatile and foundational planning tool as Everett continues to develop.

### 1. Emphasize Education and Engagement

#### For Tree Committee Members

Before the Tree Committee can reach out to Everett citizens and businesses, its members need to be somewhat fluent in the identification/general biology of trees and benefits of urban forests; the procedures and policies that govern the committee, city departments, trees and other vegetation in the City; the tree committee's history and goals, and effective education and outreach tools and techniques.



#### ***Tree Committee Recommendations (and accomplishments):***

##### **1A. Members Receive Background Information before First Meeting**

- Read latest version of Annual Urban Forest Report
- Review latest version of City of Everett Tree Policy
- Learn Roberts Rules of Order for meeting protocol
- Receive short bio of current tree committee members and city liaisons
- Write short bio to share with committee (outline provided)

##### **1B. Members Take Tree Board University Course/s (free online training)**

*Funded by the USDA Forest Service Urban and Community Forestry Assistance Program*

- Eight short courses (<http://www.treeboardu.org/>):
  - Tree Board 101
  - Partnerships and Collaboration
  - Engaging in the Political Process
  - Community Forestry Planning
  - Communications and Marketing
  - Financing, Budgeting, Grants, Fundraising
  - Getting Things Done
  - Moving Forward

##### **1C. Members Attend Conferences and Gatherings**

- Learn new ideas and latest successful approaches
  - attend annual Urban Forest Symposium, Univ. Of Washington, Seattle (*past years*) (<http://depts.washington.edu/uwbg/news/urban-forest/>)

- attend International Society of Arboriculture Conference (*Jan 2011*)
- Network with tree professionals
  - co-wrote a proposal for 2011 WA Planning Conference, a street profile design charrette with trees as foundational elements (*not accepted, 2011*)

#### **1D. Members Share New Information (at meetings)**

- Explore tree/urban forestry related websites
  - Human Dimensions of Urban Forestry and Greening (<http://www.naturewithin.info/>)
  - International Society of Arboriculture (<http://www.isa-arbor.com/>)
  - Seattle reLeaf (<http://www.seattle.gov/trees/>)
  - (State) Urban and Community Forestry Program (<http://www.dnr.wa.gov/urbanforestry>)

#### **For Citizens, Businesses and City Staff**

Citizen and business support is vital to an effective tree management program. For example, if citizens and businesses appreciate and understand trees, they will help support urban forestry causes and issues, and promote the urban forest's health into the future. Also, volunteers can help absorb some of the labor and costs associated with tree planting and maintenance. Forterra's involvement in the Green Everett Partnership assures consistency and continuity in volunteer recruitment and support.

Urban forest best practices, such as 'right tree, right place' plant choices, and tree protection procedures during development and construction are integral individual actions that collectively improve urban forest health. Education and outreach are ways that tree-related departments can share those best practices with the public.

While U.S. cities spent an average of 2.4 percent of their annual budgets on citizen education in 2000, Pacific Northwest cities spent 8.6 percent (Cascadia Consulting Group 2000). By default, private property owners manage a majority of the City of Everett's urban forest. The City should encourage and be prepared to assist citizens and businesses in properly caring for the urban forest on and/or close to their property.

#### **1E. Produce annual 'State of the Urban Forest' Report**

- Review tree data from Public Works and Parks (*monthly*)
- Present update and Tree Committee accomplishments to Parks Board (*annually*)
- Place on City's Tree Committee web page for public access (*2011, updated annually*)
- Distribute to city staff with tree-related responsibilities

#### **1F. Update City's Recommended Tree List**

- Work with Public Works to add photo link for each tree species
- Have Public Works review 'Top 25 Street Trees', check with wholesalers
- Put lists on city's website (*on city's website being tested, 2016*)
- Finalize Master Tree List (*2015*)
- Create Master tree list with detailed information and hot links for web use (*2012, updated 2013*)
- Create abbreviated list for staff and landscapers (*2012*)
- Create 'Top 25 Street Trees' list for public/residents (*2012 (on-line status pending)*)
- Work with city staff to update and expand tree species data (*2011*)

### **1G. Provide Outreach to Citizens and Businesses**

- Write short paragraph on tree-related topics for neighborhood newsletters
- Make presentations at community and business meetings
- Write tree-related articles for local newspapers, magazines and professional journals
- Create City of Everett historical tree list with photographs
  - develop brochure with walking tours
  - put on City's website
- Recognize businesses for properly caring for their green infrastructure (*need stronger City support; has not happened since 2012*)
- Changed meeting time from 4-6pm to 6-8pm to encourage public attendance (*2011*)

### **1H. Create Printed Materials**

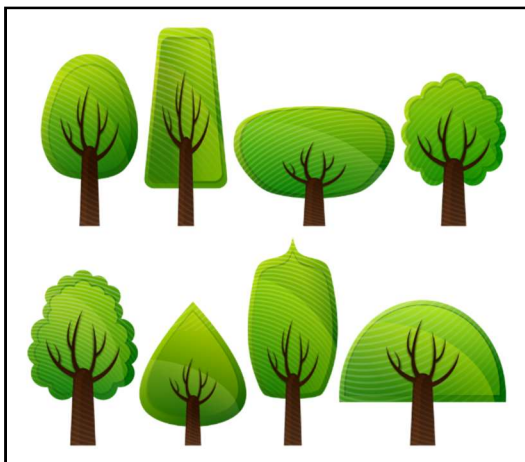
- #1 priority = brochure to help businesses understand financial and other values of trees, foster greater tree stewardship in business community, reduce downtown tree topping and bad pruning (*2014*)
  - applied for and received grant funding (\$6,000) from WA Dept. of Natural Resources Urban Forestry Program to produce/mail brochure to businesses in city (*2012-13*)
  - work out financial/administrative partnership with Parks for grant funding (*2012*)
  - use best information from federal, state and local entities (*gathered in 2011*)

### **1I. Develop Canned Presentations**

- Topics to include benefits of trees, right tree–right place, get a free tree, proper tree care
- Link presentation dates to planting events, holidays, etc

### **1J. Plan/support Tree-related Events**

- Attend/speak at annual Arbor Day Planting event (*ongoing every April*)
- Have a booth at Sorticulture (*too expensive, not enough volunteers to staff booth*)
- Support neighborhood plantings (*ongoing*)
- Participate in Forterra volunteer events (*2012 onward*)
- Have a booth/partial booth at Everett Home and Garden Show (*no volunteers*)
- Have a booth/partial booth at PUD Earth Day event (*no volunteers*)



## **2. Conduct a Tree Inventory**

A tree inventory is a database that enables city staff to record, and then plan for, the health and character of its urban forest. An inventory may contain data on each tree (on public lands) or data about tree canopy cover across all properties (usually derived from remote sensing materials such as aerial photography).

Most cities now record any inventory as a data layer in a GIS system for use in planning and/or public works. Inventory data is usually collected by city staff or by

contract, though trained volunteers can also assist. Inventory data can be linked to work plans so that urban forestry actions are efficient and effective.

The City of Bellevue, for example, has conducted a tree inventory approximately every ten years since 1972. They collect data on each tree on public land and have partnered with American Forests using Landsat satellite imagery to obtain the current tree cover for all land within the city limits (Dewald 2008).

The Tree Committee is very pleased that the city Parks Department has partnered with Forterra to produce and implement a 20-year Forestry Management Plan, starting in 2012. The excellent on-the-ground work that this partnership has done to date bodes well for the future of the City's parks and green infrastructure.

### ***Tree Committee Recommendations (and accomplishments):***

#### **2A. Track Tree Plantings, Removals and Damage**

- Review tree plantings/removals/damage at monthly meetings (*ongoing*)
- Request annual totals, including location and tree species (*ongoing*)

#### **2B. Conduct on-the-ground Tree Inventory**

- Contact local Edmonds Community College about student internship
- Update inventory every ten years
- Encourage Parks to inventory their holdings (*doing so project by project*)
- Research funding options, software programs and partnerships (*ongoing*)
- Literature review of how other PNW cities have accomplished this (*ongoing*)

### **3. Develop an Urban Forest Management Plan**

A tree or forest management plan provides policy guidance for using the tree inventory and other tools, as it directs resources to the greatest forest needs. A good plan considers the full scope of a community's forest, communicates its mission and goals, and takes a long-range view of forest health, function and benefits. Plans are often a joint effort of community stakeholders and city staff, making them responsive to the diverse needs and concerns of a community. Fiscal and staff needs are established by the plan, and priorities for field work are set.



The City of Everett does not have a comprehensive management plan for its entire urban forest. As stated in the Public Tree Policy, “the Parks and Recreation Department, with other appropriate City Departments, shall create management plans for the park-owned urban forest, establishing goals and criteria for trees on City-owned parks, park lands and open spaces”.

We applaud these park-specific management plans. They involve the local community, use the best available science available, and are professionally done. And, the work with Forterra to

develop a 20 Year Plan and complete a forest health assessment is comprehensive. Unfortunately, these Park plans do not apply to the rest of Everett's urban forest – street tree areas, downtown plantings, traffic corridor plantings, gateway areas, and undeveloped lands not owned by Parks.

From research done in Washington and other states within the past 11 years, Washington is in the lower range of cities having completed or updated tree inventories and management plans (Corletta 2001, Studer 2003). Also, fewer cities in our state are doing routine tree care compared to other states. Local managers note poor pruning and insufficient planting space issues, and struggle to address the challenges of hazard trees, pests and diseases, loss of trees and low species diversity.

The City of Seattle in 2007 produced a 30-year Urban Forest Management Plan, after five years of work. To do so, they created an interdepartmental working group representing all city departments with tree management or regulatory responsibilities. Their vision is to **“... create a thriving and sustainable mix of tree species and ages that creates a contiguous and healthy ecosystem that is valued and cared for by the City and all of its citizens as an essential environmental, economic, and community asset”**.

Until a comprehensive Urban Forest Management Plan for the City of Everett exists, the Tree Committee is committed to applying consistent standards and procedures to all tree-related city projects, plans, policies and codes as appropriate. These include: right tree-right place, proper pruning and maintenance, irrigation and protection for first two to three years after planting, having the necessary root volume/space as needed per species, using structural soils, optimizing species diversity, increasing use of evergreen trees, using native trees and shrubs, and adding compost as a natural soil amendment.

### ***Tree Committee Recommendations (and accomplishments):***

#### **3A. Work Collaboratively with City Staff**

- Identify all city departments/staff with tree planning, landscaping, management or regulatory responsibilities including city hall, libraries, fire and police stations, etc. (*ongoing*)
  - conduct informal survey to gather updated contact information (staff or contractor)
- Invite staff to discuss their responsibilities/issues at Tree Committee meetings (*ongoing*)

#### **3B. Continue the Public Works Street Tree program**

- Review tree removal requests (*ongoing as needed*)
- Suggest disease-free street trees (*ongoing as needed*)
- Suggest increased specie and age diversity (*ongoing as needed*)

#### **3C. Develop City-wide Tree Care Standards and Procedures**

- Advocate for increasing the evergreen/deciduous canopy mix in Everett
  - increase evergreen tree plantings (*ongoing*)
- Reviewed/made recommendations on City's Comprehensive Plan Review to: standardize tree and landscaping standards throughout the business corridors and in developing residential areas, create/fund a street tree maintenance crew, and emphasize natural forests and native vegetation in open space areas (*2014*)

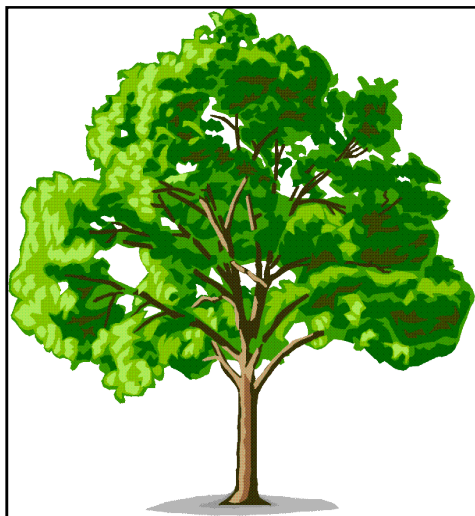
- Reviewed/made recommendations on tree removal and pruning language within critical areas, especially hillsides with views, Chapter 37 of the Zoning Code (2012)
- Reviewed/made recommendations on Evergreen Way Revitalization Plan (2011)
  - concerned street tree planting strips are not wide enough to support a healthy tree
  - concerned about inadequate soils and very low soil requirements in these types of settings
- Reviewed projects/made recommendations concerning action at Forest Park, Harborview Park, Lowell Park and Madison Ave Park (2011)
- Recommended tree replacements for Walnut Street (2011)
- Assisted Planning Department with tree planting guidelines for commercial parking lots
  - researched best guidelines in other cities (2010)
  - discussed suggestions with Planning director and staff (2010, 2012)
- Suggested flexible, site-specific guidelines for commercial plantings
  - replaced existing, rigid planting formulas to encourage more tree planting
  - discussed suggestions with Planning director (2010)

### **3D. Protect and Enhance Open Spaces**

- Work with staff to better protect and enhance existing native forests in ravines, wet areas, power corridors, steep hillsides, and other city-owned areas (*ongoing*)
  - improve native understory
  - small trees, shrubs, ground plants (*ongoing*)
  - addressed trees topped/debris/runoff on steep hill along W. Marine View Drive (2011)

### **3E. Develop a Comprehensive Urban Forest Management Plan**

- Include interdepartmental working group, other city departments, urban foresters and community stakeholders in developing this plan (*ongoing, suggested various contacts*)
- Cohesively manage Everett's urban forest as one entity
- Annually assess the health, challenges and needs of Everett's urban forest (private and public)
- Adjust goals and field work accordingly
- Reviewed/made recommendations on draft/final 20 year Forest Management Plan for Everett Parks (2012)



## **4. Set City-wide Tree Canopy Cover Goals**

As part of the Urban Forest Management Plan, the City should set tree canopy cover goals. Tree canopy cover is the percentage of land within a city that is covered by tree canopies. [Tree canopy = the total amount of surface areas of leaves, branches and tree trunk which would intercept rainfall.]

This is a more accurate measure of the health, value and function of an urban forest than a tree inventory. While American Forests offers guidelines on canopy cover, each community must first identify what their tree canopy

cover is, and then set their own goals to help meet environmental and quality of life goals, including federal and local clean air and water regulations.

American Forests, a leading urban forest management, conservation and research group, uses tree cover/canopy to determine the condition of urban forests. Tree cover is a good indicator of an urban ecosystem's health, as they are directly related. Based on studies done by urban forest scientists and public policy makers in the last 20 years, the average tree canopy goal for urban areas nationwide was established at 40 percent in 1997 (Cascadia Consulting Group 2000). However, American Forests no longer recommends 40 percent as a universal goal because the research does not support it (2017).

They recommend a more 'nuanced' goal, specific for each city and taking into consideration the constraints such as development densities, land use patterns, ordinances and climate. The new tree canopy goal recommendations are defined different land use areas and for the Pacific Northwest are:

Business districts - 15% tree canopy goal

Urban residential - 25% canopy goal

Suburban areas - 50% canopy goal

Three early surveys (1986, 1989 and 1991) that American Forests conducted focused on the health and condition of public street trees (American Forests 2008). The organization's understanding of the environmental benefits of urban forests grew at the same time as the technology improved to more accurately measure an urban forest's extent. These two developments in tandem made it possible to measure actual land cover, quantify its environmental benefits, and for the first time link tree canopy cover goals to community-wide goals for clean air and water.

At this time, no on-the-ground analysis or satellite canopy coverage inventory has been conducted for Everett's urban forest. The City does possess the technology and aerial photography to distinguish green space (trees, shrubs, grass) from gray space (buildings, roads, parking lots, etc) and calculate those percentages. However, these numbers are not a true estimate of the urban forest canopy itself.

American Forests also states that, in addition to tree canopy cover, a quality urban forest must consider native and non-invasive species, tree age, species diversity, tree condition and equitable distribution across income levels.

The City's Street Tree Program is the most advanced in terms of inventory, with some detailed information (planting date, species, location) dating back to 2000. The Parks Department is in the midst of landscape scale tree inventory, which will be completed by the end of 2017. This inventory will include the number, location and size of trees (small, medium, large) to better allocate tight maintenance dollars.

### ***Tree Committee Recommendations (and accomplishments):***

#### **4A. Complete a Comprehensive Baseline Tree Cover Inventory**

- Undertake as soon as fiscally possible
- Conduct or contract for this inventory
- Research and apply for grant funding



- Seek partners (county, cities, colleges, environmental and community groups, etc)
- Use proven techniques/protocols developed by USDA that have City GIS capabilities

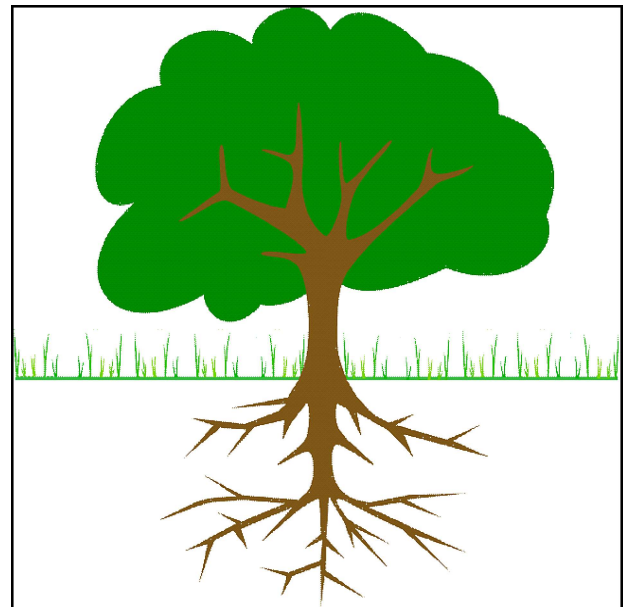
#### **4B. Set Tree Canopy Goals**

- Include interdepartmental working group, other city departments, urban foresters and community stakeholders
- Set goals for business districts, urban and suburban areas (goals or a baseline for each neighborhood/friendly contest)
- City and Tree Committee will use goals to inform tree policy and related funding decisions

## **5. Increase Investments in Routine Tree Care**

Routine tree care gives the greatest return for public spending on trees. Tree care in many cities is done on-demand in response to citizen complaints, emergencies (such as wind or snow storms), new developments, or updating planning documents. On-demand tree work means that crews will move among scattered sites, resulting in greater travel times and personnel downtime per tree pruned.

The Parks Department's maintenance crew does a most commendable job of providing tree care on a three- to five-year cycle, in spite of the large number of trees and other plants they must attend to and the limited number of staff in the field. The City's street trees, however, are the responsibility of the residential or commercial property owner. The degree to which each owner knows they are responsible for and actually properly cares for its trees is spotty, varying widely from outright negligent to sufficient regular attention.



### ***Tree Committee Recommendations (and accomplishments):***

#### **5A. Hire one or more Dedicated Field Crews**

- To properly care for increasing number of downtown business landscapes, and plantings along major traffic corridors and gateways
- To improve the health and public benefits of the City park system's forest

#### **5B. Encourage Proper Tree Care**

- Ensure all owners properly care for street trees on their property (*Parks created tree brochure for businesses, 2014*)
- Attend educational conferences and share information
  - Healthy Soils and Trees in the Built Environment, UW Botanic Gardens (*October 2014*)
  - Climate Change and the Urban Forest, Urban Forest Symposium (*May 2014*)
  - Tree and Views, Urban Forest Symposium (*May 2013*)



## 6. Update the City's Tree Policy

Tree policies maintain, preserve and enhance the urban forest and increase the overall canopy, health and longevity of its trees. Everett's tree policy governs only public trees – those in parks, right-of-ways, and on other city-owned land managed by the Parks or Public Works departments.



Tree policies can include goals for tree and vegetation work, hazardous tree management, pruning standards, tree retention and protection during construction, tree protection and replacement, viewpoints, permits, slope stability, wildlife and habitat, vegetation management plans and partnerships. Everett's current tree policy was created in 1993. Parks began the process to update this 23-year-old policy in 2015.

Some communities in Puget Sound have also extended precautions to trees on private property that are deemed significant due to age, size, historic, or natural resource value (Bellevue, Kirkland, Seattle). Private property code is particularly important for detecting and treating pest and disease outbreaks before all forest areas in a community are invaded.

### ***Tree Committee Recommendations (and accomplishments):***

#### **6A. Assist Parks and Public Works in Updating 1994 Tree Policy**

- Create flow chart of how tree policy affects/interacts with other city departments
- Write draft of updated Tree Policy (2016) (*in-progress 2017*)
- Offer substantive suggestions and comments (2016) (*in-progress 2017*)
- Modernize concepts, language and flow of document (2016) (*in-progress 2017*)
- Research/review other city tree policies and tree manuals (2015)

#### **6B. Implement Proven Protection Techniques**

- Research what other cities are doing to save trees during construction (*ongoing*)
  - require trees be fenced at their drip line
  - levy hefty fines for any tree damage during construction
- Research what other cities are doing to protect newly planted trees (*ongoing*)
- Make suggestions for inclusion in appropriate city codes, policies, etc. (*ongoing*)

#### **6C. Promote Monetary Value of Trees**

- Incorporate the dollar value associated with a tree's environmental services when making land-use decisions (*current and future financial benefits - as a tree grows its benefits increase*)
- Push for the creation of a City-wide Tree Fund, funded by permit fees, donations, etc.

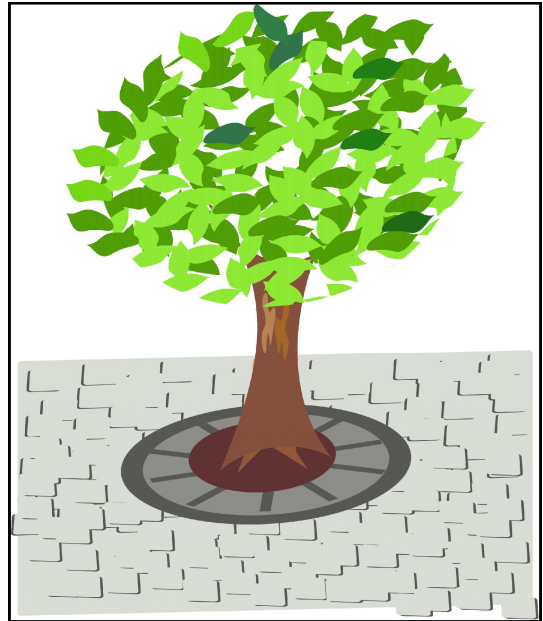
## **6D. Incorporate Trees in Planning Documents**

- Use trees as an essential ‘green infrastructure’ tool to help meet air and water quality regulations, reduce erosion, stabilize slopes, provide cooling effects, calm traffic, etc.
- Use trees as a valuable, foundational element of urban design, not an after thought

## **7. Create a Strong Tree Protection and Retention Ordinance**

The greatest hazard to trees is their removal to make way for new development or views. As discussed earlier, studies have shown that large, mature trees offer the greatest level of services and benefits when compared to medium and small sized trees. If designed and constructed carefully, a new development can retain its beautiful stands of large trees.

Retention and preservation ordinances are meant mainly for private property (particularly parcels that are in review for development) to optimize tree retention and health in new built environments. In Atlanta, Georgia for example, developers now must plant street trees in all new developments (American Forests 2008). If that's not possible, they must contribute to a Tree Trust Fund. To date, the fund contains more than \$1 million for trees to be planted in other areas of the city.



The City of Everett’s Public Tree Policy contains a tree protection section that states one can not impact or excavate near a tree on city owned land without first obtaining a written permit and can not deposit anything near same such tree unless it’s an emergency. Under valuation of trees, both deciduous and evergreen trees are to be replaced at a two to one ratio (two replanted for every one removed). However, there is no language regarding retention and protection of existing mature trees (which provide the highest level of environmental and economic benefits). Nor is there any language regarding retaining or protecting trees on private property.

In Kirkland, WA for example, as of January 2006, private homeowners are only allowed to remove two 6-inch dbh trees within a 12-month period, even if those trees are hazards or nuisances (City of Kirkland 2008). When developing property, an applicant must submit a “Tree Plan”. Plus the homeowner’s responsibility of caring for street trees includes getting prior City approval for pruning. A tree brochure from Kirkland states, **“The City of Kirkland is committed to protecting and enhancing trees as part of the community’s urban forest and its valuable natural resources”**.

The Snohomish County Council updated their 2009 tree retention regulations for unincorporated areas in 2014 (Snohomish County Planning and Development Services 2015). In the past, their tree retention and replacement regulations only applied to sites with significant trees. Recognizing the importance of a mixed-age, mixed-species urban tree canopy, new regulations

were adopted to treat urban residential sites without tree canopy the same as urban residential sites with tree canopy.

Residential builders have to leave existing trees in place or plant replacement trees for any they remove. Regulations added in 2014 now include all evergreen and deciduous trees six feet in height or greater (excluding invasive species or noxious weeds); and incentives to retain significant trees and tree canopy.

## ***Tree Committee Recommendations (and Accomplishments):***

### **7A. Update Permit Submittal Process**

- For any new construction and major remodeling
- All public trees and significant private trees, including their drip lines and critical root zones on the subject property, must be incorporated on the site plan
- All of the same must be protected from harm

### **7B. Create Tree Coverage Density**

- For all new construction and major remodeling
- Require each site to meet a minimum density of tree coverage following project construction

### **7C. Add Protective Tree Language**

- Such as, “Existing mature trees shall be retained and protected” (*ongoing*)
- Such as, “No street tree shall be topped, sheared or pollarded” (*ongoing*)
- Such as, “Proper irrigation shall be provided and maintained” (*ongoing*)
- Such as, “Any street tree damaged shall be replaced by the property owner within three months”
- Set accumulative fines for wayward property owners
- Include above language in appropriate city codes, ordinances and other documents
- Developers shall plant an approved number of street trees in all new developments, and maintain those trees for five consecutive years, or contribute to a Tree Care Trust Fund

## References

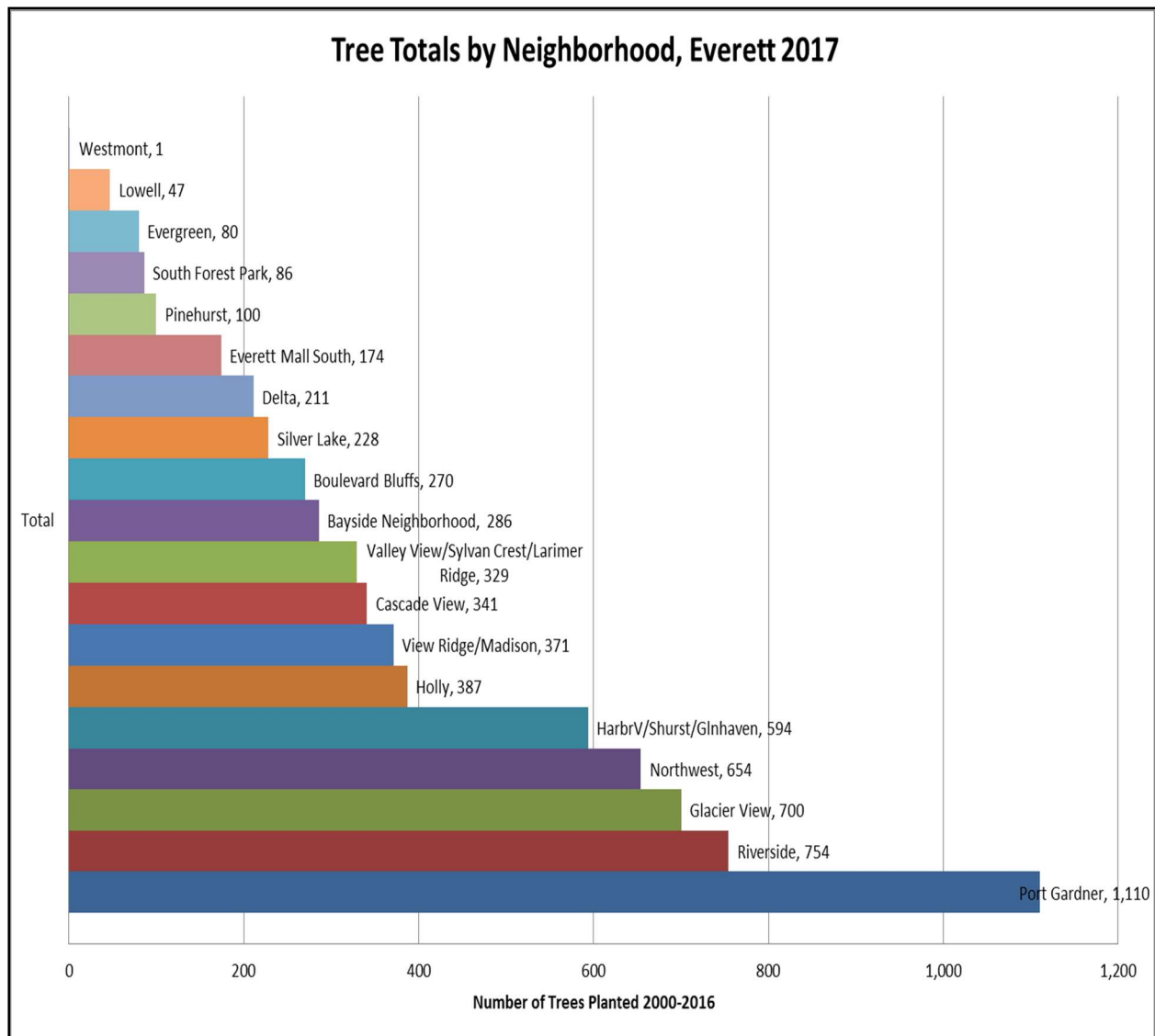
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## Appendix A. Total Trees Planted by Neighborhood City of Everett, 2000-2016



## Appendix B

### **2017 Tree Committee Members**

Eric Gilmore, chair  
Ajay Mathison, co-chair  
Laura McMurray  
Katrina Lindahl  
Michael Yates  
Megan Dunn



### **Tree Committee City Department Liaisons**

Danielle Todoroff, Parks and Recreation Department  
Bob Leonard, Parks and Recreation Department  
Geoff Larson, Parks and Recreation Department  
Paul Crane, Public Works Department

### **Past Tree Committee Members**

Bill Belshaw  
Michael Berry Sr.  
Peter Dervin  
Nick Eckert  
Connie Eden  
C. K. Eidem  
Mike Gilchrest  
Dorothy McFarlane  
Gene Fosheim  
Jack O'Donnell  
Kurt Munnich  
Mike Nickerson  
Drew Nielsen  
Penny Redmond  
Robin Roundtree  
Gretchen Shaffer  
Steve Somogy  
Jim Staniford  
Karen Stewart  
Rachael Vitous  
Donald Winningham  
Grant Hopper  
Donna Gleisner  
Kathryn Beck